Mid-States Aluminum Corp.

Wisconsin Manufacturing Extension Partnership

WMEP's Lean Six Sigma Helps Mid-States Shrink Downtime

Client Profile:
Mid-States Aluminum Corp. is a custom manufacturer of aluminum extrusions and anodized parts for the automotive, furniture, and medical industries. The company employs 240 people at its facility in Fond du Lac, Wisconsin.

Situation:
Mid-States was facing machine reliability issues, long quote and setup times and an overall improvement effort that was unfocused. "We had a continuous improvement department, but it wasn't a functional department that spanned the entire plant," said Tim Rice, Mid-States' Lean Six Sigma deployment champion. "We had factories within a factory. We weren't operating as a cohesive unit." When a new CEO who had a background in Six Sigma joined Mid-States, the company was set on a new course. The company turned to the Wisconsin Manufacturing Extension Partnership (WMEP), a NIST MEP network affiliate, for training in Lean Six Sigma to address waste and focus on customer requirements.

Solution:
WMEP's first project with Mid-States was to address excessive downtime on an extrusion press. "It was making it difficult for us to make scheduled production and achieve growth goals," said Judy Lux, Mid-States' Lean Six Sigma black belt. "We wanted the process to be more reliable." WMEP created a Value Stream Map (VSM)which illustrated material flow with the goal of eliminating non-value added activities. The company realized that the bottleneck was a belt transfer system that moved materials from the press to the next production area. To discover why the belt kept slipping, they used '5 Whys,' a Lean Six Sigma analytical tool, to determine the root cause. Through the analysis, they learned that the belt had been lengthened over time to make it easier to change during maintenance. But lengthening the belt also caused it to slip. They returned to the original belt size and purchased better tools to make maintenance easier.
Another project involved Setup Reduction for secondary equipment on the shop floor. After parts are extruded, they often need additional work that requires drill presses, grinders or buffers. This auxiliary equipment was being moved from work station to work station. "When they needed the equipment, they had to go on a hunt," said Dick Welsch, WMEP manufacturing specialist. "They could spend 30 to 45 minutes looking for something and a lot of times, it was already being used." During a one-day Kaizen event, they developed a simple solution -- a scheduling board showing the location of all machines and their status. They also developed an equipment list to provide proper accounting of all equipment. The company also put the equipment on wheels, which eliminated the search for a forklift or pallet jack to get the equipment to where it was needed.
Mid-States' Lean Six Sigma efforts were not confined to the shop floor. They also created a VSM of their quoting process and used Lean Office to reduce their quoting time by half. "Our sales department indicated that in order to be a world class company, we had to turn quotes around in three days or

less," said Rice. "We developed a different way to process quotes with fewer handoffs between departments and fewer people involved."

Results:
* Anticipated increased sales of $75,000.
* Reduced material handling by 90 percent.
* Reduced lead time by 50 percent.

Testimonial:
"The VSM projects with WMEP were very pivotal to the success of our projects. The order process was a big eye opening thing. We know where to target our efforts."
Judy Lux, Lean Six Sigma Black Belt